CLAIMS:

1. A method for driving a bi-stable display with reduced cross talk, the method comprising:

accessing data defining at least first and second voltage waveforms;

generating the first voltage waveform (500, 600, 700, 800, 900) for driving a first portion of the bi-stable display (310) according to the accessed data from a first optical state to a second optical state that is close to the first optical state; and

generating the second voltage waveform (520, 620, 720, 920) for driving a second portion of the bi-stable display (310) according to the accessed data from the first optical state to a third optical state that is substantially different than the first optical state, such that the second voltage waveform is set to terminate at a different time than the first voltage waveform by a time difference (t2) of at least one frame period (FT).

2. The method of claim 1, wherein:

the generating the second voltage waveform for driving the second portion of the bi-stable display (310) according to the accessed data from the first optical state to the third optical state comprises driving the second portion of the bi-stable display (310) with at least one drive pulse (ED1, ED2); and

the generating the first voltage waveform for driving the first portion of the bi-stable display (310) according to the accessed data from the first optical state to the second optical state comprises driving the first portion of the bi-stable display (310) with at least one drive pulse (ED, ED1, ED2, ED3) that at least partly compensates for a cross talk induced by the at least one drive pulse of the second voltage waveform.

3. The method of claim 2, wherein:

the generating the first voltage waveform for driving the first portion of the bi-stable display (310) according to the accessed data from the first optical state to the second optical state comprises driving the first portion of the bi-stable display (310) so that the at least one drive pulse thereof is at least partly overlapping with the at least one drive pulse of the second voltage waveform.

4. The method of claim 1, wherein:

the generating the second voltage waveform for driving the second portion of the bi-stable display (310) according to the accessed data from the first optical state to the third optical state comprises driving the second portion of the bi-stable display (310) according to the accessed data such that the second voltage waveform is set to terminate before the first voltage waveform by the time difference (t2) of at least one frame period (FT).

5. The method of claim 1, wherein:
the second optical state is substantially the same as the first optical state.

6. The method of claim 1, further comprising:
determining the time difference (t2) based on an ambient temperature (T).

7. The method of claim 1, wherein:
the time difference (t2) relative to a total time (t1) of the second voltage waveform is expressed by $t2/(t1+t2)x100\% > 5\%$.

8. The method of claim 1, wherein:
the time difference (t2) relative to a total time (t1) of the second voltage waveform is expressed by $t2/(t1+t2)x100\% > 10\%$.

9. The method of claim 1, wherein:
the generating the second voltage waveform for driving the second portion of the bi-stable display (310) according to the accessed data from the first optical state to the third optical state comprises driving the second portion of the bi-stable display (310) according to the accessed data from one extreme optical state (B, W) to another extreme optical state (W, B).

10. The method of claim 1, wherein:

the generating the second voltage waveform for driving the second portion of the bi-stable display (310) according to the accessed data from the first optical state to the third optical state comprises driving the second portion of the bi-stable display (310) according to the accessed data from one intermediate optical state (LG, DG) to another intermediate optical state (LG, DG).

11. The method of claim 1, wherein:

the generating the second voltage waveform for driving the second portion of the bi-stable display (310) according to the accessed data from the first optical state to the third optical state comprises driving the second portion of the bi-stable display (310) according to the accessed data from one extreme optical state (B, W) to an intermediate optical state (LG, DG).

12. The method of claim 1, wherein:

the generating the second voltage waveform for driving the second portion of the bi-stable display (310) according to the accessed data from the first optical state to the third optical state comprises driving the second portion of the bi-stable display (310) according to the accessed data from one intermediate optical state (LG, DG) to an extreme optical state (B, W).

13. The method of claim 1, wherein:

the generating the first voltage waveform comprises generating the first voltage waveform having at least one driving pulse (ED1, ED2) and at least one additional pulse (A, A1, A2) of opposite polarity; and

the generating the second voltage waveform comprises generating the second voltage waveform having at least one driving pulse (ED, ED1, ED2, ED3) and at least one additional pulse (A, A1, A2) of opposite polarity.

14. The method of claim 1, wherein:

the bi-stable display comprises an electrophoretic display.

15. A program storage device tangibly embodying a program of instructions executable by a machine to perform a method for driving a bi-stable display with reduced cross talk, the method comprising:

accessing data defining at least first and second voltage waveforms;

generating the first voltage waveform (500, 600, 700, 800, 900) for driving a first portion of the bi-stable display (310) according to the accessed data from a first optical state to a second optical state that is close to the first optical state; and

generating the second voltage waveform (520, 620, 720, 920) for driving a second portion of the bi-stable display (310) according to the accessed data from the first optical state to a third optical state that is substantially different than the first optical state, such that the second voltage waveform is set to terminate at a different time than the first voltage waveform by a time difference (t2) of at least one frame period (FT).

16. The program storage device of claim 15, wherein:

the generating the second voltage waveform for driving the second portion of the bi-stable display (310) according to the accessed data from the first optical state to the third optical state comprises driving the second portion of the bi-stable display (310) with at least one drive pulse (ED1, ED2); and

the generating the first voltage waveform for driving the first portion of the bi-stable display (310) according to the accessed data from the first optical state to the second optical state comprises driving the first portion of the bi-stable display (310) with at least one drive pulse (ED, ED1, ED2, ED3) that at least partly compensates for a cross talk induced by the at least one drive pulse of the second voltage waveform.

17. The program storage device of claim 16, wherein:

the generating the first voltage waveform for driving the first portion of the bi-stable display (310) according to the accessed data from the first optical state to the second optical state comprises driving the first portion of the bi-stable display (310) so that the at least one drive pulse thereof is at least partly overlapping with the at least one drive pulse of the second voltage waveform.

18. The program storage device of claim 15, wherein:

the generating the second voltage waveform for driving the second portion of the bi-stable display (310) according to the accessed data from the first optical state to the third optical state comprises driving the second portion of the bi-stable display (310) according to the accessed data such that the second voltage waveform is set to terminate before the first voltage waveform by the time difference (t2) of at least one frame period (FT).

19. The program storage device of claim 15, wherein:

the second optical state is substantially the same as the first optical state.

20. The program storage device of claim 15, wherein the method further comprises:

determining the time difference (t2) based on an ambient temperature (T).

21. The program storage device of claim 15, wherein:

the generating the second voltage waveform for driving the second portion of the bi-stable display (310) according to the accessed data from the first optical state to the third optical state comprises driving the second portion of the bi-stable display (310) according to the accessed data from one extreme optical state (B, W) to another extreme optical state (W, B).

22. The program storage device of claim 15, wherein:

the bi-stable display comprises an electrophoretic display.

23. An electronic reading device, comprising:

a bi-stable display (310); and

a control (100) for driving a bi-stable display with reduced cross talk by: (a) accessing data defining at least first and second voltage waveforms, (b) generating the first voltage waveform (500, 600, 700, 800, 900) for driving a first portion of the bi-stable display (310) according to the accessed data from a first optical state to a second optical state that is close to the first optical state, and (c) generating the second voltage waveform (520, 620, 720, 920) for driving a second portion of the bi-stable display (310) according to the accessed data from the first optical state to a third optical state that is substantially

different than the first optical state, such that the second voltage waveform is set to terminate at a different time than the first voltage waveform by a time difference (t2) of at least one frame period (FT).

24. The electronic reading device of claim 23, wherein:

the generating the second voltage waveform for driving the second portion of the bi-stable display (310) according to the accessed data from the first optical state to the third optical state comprises driving the second portion of the bi-stable display (310) with at least one drive pulse (ED1, ED2); and

the generating the first voltage waveform for driving the first portion of the bi-stable display (310) according to the accessed data from the first optical state to the second optical state comprises driving the first portion of the bi-stable display (310) with at least one drive pulse (ED, ED1, ED2, ED3) that at least partly compensates for a cross talk induced by the at least one drive pulse of the second voltage waveform.

25. The electronic reading device of claim 24, wherein:

the generating the first voltage waveform for driving the first portion of the bi-stable display (310) according to the accessed data from the first optical state to the second optical state comprises driving the first portion of the bi-stable display (310) so that the at least one drive pulse thereof is at least partly overlapping with the at least one drive pulse of the second voltage waveform.

26. The electronic reading device of claim 23, wherein:

the generating the second voltage waveform for driving the second portion of the bi-stable display (310) according to the accessed data from the first optical state to the third optical state comprises driving the second portion of the bi-stable display (310) according to the accessed data such that the second voltage waveform is set to terminate before the first voltage waveform by the time difference (t2) of at least one frame period (FT).

27. The electronic reading device of claim 23, wherein:

the second optical state is substantially the same as the first optical state.

28. The electronic reading device of claim 23, wherein:

the control determines the time difference (t2) based on an ambient temperature (T).

29. The electronic reading device of claim 23, wherein:
the bi-stable display comprises an electrophoretic display.